

RESPONSE TO OFFICE ACTION  
Serial No. 09/352,008  
Page 2 of 10

**IN THE CLAIMS**

1-11. (Cancelled)

12. (Currently Amended) A method of etching a substrate in a chamber having internal surfaces, comprising:

(a) flowing at least a first etchant and a second etchant into the chamber, wherein a volumetric flow of the first etchant is greater than a volumetric flow of the second etchant;

(b) striking a plasma in the chamber to cause ~~disassociation~~ dissociation of the first etchant and the second etchant and etching of the substrate, wherein the ~~disassociated~~ dissociated first etchant deposits material on the internal surfaces at a first rate and the ~~disassociated~~ dissociated second etchant deposits material on the internal surfaces at a second rate less than the first rate; and

(c) flowing oxygen into the chamber.

13. (Previously Presented) The method of claim 12, wherein the first etchant comprises chlorine and the second etchant comprises bromine.

14-17. (Cancelled)

18. (Previously Presented) A method of etching a substrate, comprising:

(a) positioning a substrate in a chamber having internal surfaces;

(b) flowing a chemical mixture into the chamber;

(c) striking a plasma of the chemical mixture to form one or more plasma constituents;

(d) depositing a film on the internal surfaces; wherein a first recombination rate of the one or more plasma constituents with the internal surfaces is substantially equal to a second recombination rate of the one or more plasma constituents with the film; and

RESPONSE TO OFFICE ACTION  
Serial No. 09/352,008  
Page 3 of 10

(e) etching the substrate.

19. (Previously Presented) A method of etching a substrate, comprising:

- (a) positioning a substrate in a chamber having internal surfaces;
- (b) flowing a chemical mixture into the chamber;
- (c) striking a plasma in the chamber from the chemical mixture to form one or more plasma constituents,

(d) depositing a film on the internal surfaces, wherein a first recombination rate of the one or more plasma constituents with the internal surfaces is substantially equal to a second recombination rate of the one or more plasma constituents with the film; and

(e) etching the substrate, wherein the substrate comprises polysilicon and wherein the internal surfaces substantially comprises quartz.

20. (Previously Presented) The method of claim 19, wherein the internal surfaces comprise a liner disposed on a chamber body.

21. (Previously Presented) A method of etching a substrate, comprising:

supplying the substrate to a processing chamber of an etch reactor;

providing a gas mixture to the processing chamber, the gas mixture comprising a bromine-containing gas and a gas comprising at least one of:

(a)  $\text{SF}_6$  and  $\text{NF}_3$  each provided at a flow rate of less than about 20% of the flow rate of the gas mixture;

(b)  $\text{CF}_4$  and  $\text{O}_2$  provided at a flow ratio  $\text{CF}_4:\text{O}_2$  of about 4:1 and a flow rate of less than about 50% of the flow rate of the gas mixture; and

(c) chlorine-containing gas; and  
energizing the gas mixture into a plasma.

22-32. (Cancelled)

**RESPONSE TO OFFICE ACTION**

**Serial No. 09/352,008**

**Page 4 of 10**

33. (Previously Presented) The method of claim 19, wherein the one or more plasma constituents comprises chlorine, hydrogen chloride, and combinations thereof.

34. (Previously Presented) The method of claim 19, wherein the one or more plasma constituents comprises bromine, hydrogen bromide, and combinations thereof.

230416